Suvo Banik

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EDUCATION:

Ph.D. **Mechanical Engineering** Jan 2020 -present

University of Illinois at Chicago, United States.

Advisor: Dr. Subramanian Sankaranarayanan

- Thesis: Reinforcement Learning for inverse design of materials**.**
- GPA: **4.0**

B.E. **Power Engineering** Jun 2014 - Dec 2018

Jadavpur University, India.

- Specialization: Fluidics, Thermal Transport, Heat transfer.
- GPA: **4.0** (Valedictorian)

RESEARCH INTERESTS:

I use computational modeling, Artificial Intelligence/Machine Learning, and reinforcement learning for designing novel materials in energy, catalysis, CO2 capture, and drug discovery by mining materials data.

RESEARCH EXPERIENCE:

Research Intern May 2023-Aug 2023

Schrodinger, Inc., New York, United States.

Advisor: Dr. Garvit Agarwal, Dr. James Stevenson

- Developed an autonomous workflow for high-throughput prediction of ionic conductivity of battery electrolytes using hybrid QM/MD/Deep Leaning model.

Graduate Research Assistant Jan 2020–Present

University of Illinois at Chicago, Chicago, IL, United States.

Advisor: Dr. Subramanian Sankaranarayanan

- Developed a novel multiscale material characterization method, employed reinforcement learning for inverse materials design. Authored five articles and co-authored another seven.

Visiting Graduate Student Jan 2020–Present

Argonne National Laboratory, Lemont, IL, United States.

Advisor: Dr. Subramanian Sankaranarayanan

- Developed CASTING**,** a platform for materials design and developing efficient electronic property calculations workflow with Machine Learning and tight-binding models.

Research Assistant Jun 2019–Dec 2019

Advanced Materials Research Lab, Jadavpur University, Kolkata, India.

Advisor: Dr. Ranjan Ganguly

- Worked on designing enhanced electronic cooling **s**ystem using computational fluid dynamics, leading to a publication in a peer-reviewed journal.

TEACHING EXPERIENCE:

Course: Data Science and Machine Learning Aug 2023-present

Department of Mechanical and Industrial Engineering, University of Illinois at Chicago.

- Created teaching content and conducting hands-on tutorials to teach students various aspects of data science and machine learning.

Courses: Production Planning and Inventory Control, Quality Control and Reliability Aug 2020–Dec 2020

- Collaborated with instructors to create course materials, video lectures, and a customized Blackboard platform to enhance student engagement and understanding.

AWARDS, AND HONORS:

Award for Graduate Research (AGR), University of Illinois at Chicago.	2023
Graduate Student Award, Materials Research Society (MRS)	2023
Chicago Consular Corps (CCC) award.	2023
Best presentation award at Materials Research Society (MRS) conference, Hawaii.	2022
Student presenter award, University of Illinois at Chicago.	2022
GSC, Graduate student travel award, University of Illinois at Chicago.	2022
Session chair Symposium CH04.03 & CH04.04, Materials Research Society (MRS), Boston.	2021
University gold medal for academic excellence, Jadavpur University.	2018

ACTIVITIES:

Volunteering:

- Volunteered with Rescuing Leftover Cuisine (RLC) and the FOOD RECOVERY NETWORK to combat food insecurity, as well as with ENGin, an online platform enhancing English skills and fostering cross-cultural connections with war-devastated Ukrainian youth.

Mentoring:

- Trained junior graduate students and mentored summer interns, guiding them in coding, soft skills, and materials design software. Also, provided guidance in AI and machine learning to support their research success.

Entrepreneurial:

- Served as the scientific lead in the 'AI4MIND' team at U.S. National Science Foundation's Innovation Corps (I-Corps™) entrepreneurial program. Assisted in securing a $25K funding as part of UIC 'Chancellor's Translational Research Initiative' award for my developed workflow, CASTING.

HOBBIES & LANGUAGE:

- I enjoy photography, reading science fiction novels, and experimenting with new recipes whenever I get the chance.
- I am fluent in reading, writing, and communication in both English and Bengali, with native proficiency in the latter. I have beginner-level skills in Japanese.

PUBLICATIONS:

My Google Scholar Profile: https://scholar.google.com/citations?user=8McvaxQAAAAJ&hl=en